

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Expanding Flexible Use of the 3.7 to 4.2 GHz Band)	GN Docket No. 18-122
)	
Expanding Flexible Use in Mid-Band Spectrum)	GN Docket No. 17-183
Between 3.7 and 24 GHz (Inquiry Terminated)	
as to 3.3-4.2 GHz))	
)	
Petition for Rulemaking to Amend and Modernize)	RM-11791
Parts 25 and 101 of the Commission's Rules to)	
Authorize and Facilitate the Deployment of))	
Licensed Point-to-Multipoint Fixed Wireless)	
Broadband Service in the 3.7-4.2 GHz Band))	
)	
Fixed Wireless Communications Coalition, Inc.)	RM-11778
Request for Modified Coordination Procedures in)	
Band Shared Between the Fixed Service and the)	
Fixed Satellite Service)	

COMMENTS OF PSSI GLOBAL ON SSO JOINT PETITION FOR STAY

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Dated: May 27, 2020

SUMMARY

PSSI Global Services, L.L.C. (“PSSI”), hereby submits its Comments in support of the “Joint Petition for Stay of Report and Order and Order of Proposed Modification Pending Judicial Review,” filed by by ABS Global Ltd., Empresa Argentina de Soluciones Satelitales S.A., Hispamar Satélites S.A. and Hispasat S.A. (Hispasat) (collectively the “SSOs”) (such filing the “Stay Petition”). PSSI strongly supports a stay of the Commission’s Report and Order in this proceeding.¹

PSSI is the leading full-service satellite transmission company in the United States. It operates a fleet of more than 60 vehicles, which can operate from any location without having a fixed latitude and longitude, unlike stand-alone, fixed receive antennas (the “Transportables”). The Report and Order causes considerable and immediate harm to operators of Transportables. Like the SSOs, PSSI has sought judicial review of the Report and Order.²

Among the Commission’s several legal errors in the Report and Order, the SSOs the correctly note that the modifications of their authorizations made by the Report and Order vastly exceed its authority under Section 316 of the Communications Act. Similarly, PSSI submits that the modification of the Licenses for the Transportables dictated by the Report and Order exceed the Commission’s authority and are so extensive and pervasive as to render the Licenses a nullity and eliminate the continued ability of transportable, transmit/receive earth station operators like PSSI to continue to provide service to the public, far exceeding the limits for permitted modification.

In addition, as it has done with the SSOs, the Commission modified PSSI’s Licenses without

¹ *In the Matter Expanding Flexible Use in the 3.7 – 4.2 GHz Band (Report and Order and Order of Proposed Modification)*, 35 FCC Rcd ___, FCC 20-22, released March 3, 2020 (the “Report and Order”).

² See *PSSI Global Services, L.L.C. v. Federal Communications Commission, et al.*, Case No. 20-1142. The SSO appeal and petition for judicial review have been consolidated with the PSSI cases.

adequate notice, in that the Report and Order modified the uplink portion of PSSI's Licenses after the Commission expressly gave notice that the Commission would be dealing with changes to the 5.925-6.425 GHz band separately from this proceeding³. By repurposing 300 MHz of spectrum in the C-band, the Commission has also effectively eliminated the inextricably linked 300 MHz of the uplink spectrum between 5.925-6.225 GHz paired with the frequencies between 3.7 and 4.0 GHz now to be repurposed for "flexible licensees."

PSSI's Comments lay out in detail the harm caused to operators of Transportables. These harms include, but are not limited to, (1) the progressive elimination of occasional use (OU) transponder capacity reduces the ability to provide service at existing levels, if at all, (2) excessively high-power levels operating on in-band and adjacent out-of-band frequencies that already harm the ability to provide reliable service will only get worse, and (3) the related issue that there are no existing filtering solutions to protect Transportables from interference and damage from high powered emissions of new 5G licensees operating in the lower portion of what is today the C-band. All these harms flow directly from the Report and Order

The SSOs and PSSI will prevail on their claims regarding the fundamental changes in their licenses exceeding the Commission's statutory authority under Section 316 of the Communications Act. Further, the Commission has failed to give adequate notice of the fundamental changes in their licenses.

The harm outlined in the Stay Petition and as noted by PSSI in its Comments is substantial and irreparable. PSSI is already experiencing the consequences of the Report and Order in the form of lost projects.

³ *Order and Notice of Proposed Rulemaking in GN Docket 18-122*, 33 FCC Rcd 6915, 6921 (¶ 12).

Grant of the stay will not harm the public interest. There are sufficient spectrum alternatives available so that the Report and Order can be stayed pending judicial review without causing any harm to private parties. Further, any harm that such parties may endure because of imposing a stay is outweighed by the irreparable injury that parties supporting a stay such as PSSI and the SSOs would sustain absent a stay.

Thus, the Stay Petition satisfies the *Virginia Petroleum Jobbers* test. The Commission should grant the Stay Petition.

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COMMENTS OF PSSI GLOBAL ON SSO JOINT PETITION FOR STAY

PSSI GLOBAL SERVICES, L.L.C. ("PSSI") hereby comments on the "Joint Petition for Stay of Report and Order and Order of Proposed Modification Pending Judicial Review," filed May 15, 2020 by ABS Global Ltd., Empresa Argentina de Soluciones Satelitales S.A., Hispamar Satélites S.A. and Hispasat S.A. (Hispasat) (collectively the "SSOs") (such filing the "Stay Petition").¹ PSSI supports grant of a stay of the Commission's Report and Order² in this proceeding pending completion of judicial review. The Stay Petition demonstrates the underlying false premise in the Commission's Report and Order, namely that satellite operators and others, including the Transportable earth station operators like PSSI will be able "to maintain the same services as they

¹ By *Public Notice*, "Wireless Telecommunications Bureau Seeks Comment on Joint Petition for Stay of Report and Order and Order of Proposed Modification Pending Judicial Review," DA 20-536, released May 22, 2020, the Commission sought comments on the Stay Petition and established May 27, 2020, as the deadline for filing of any comments. Accordingly, PSSI's Comments are timely filed.

² *In the Matter Expanding Flexible Use in the 3.7 – 4.2 GHz Band (Report and Order and Order of Proposed Modification)*, 35 FCC Rcd ___, FCC 20-22, released March 3, 2020 (the "Report and Order").

are currently providing[]”³ under the rules and policies adopted in the Report and Order. The Commission should grant the Stay Petition.

I. Background and Interest

1. PSSI is the leading full-service satellite transmission and mobile transportable solutions company operating in the United States. PSSI operates a fleet of more than 60 C-band and Ku-band vehicles,⁴ which can operate from any location without having a fixed latitude and longitude, unlike stand-alone, fixed receive antennas (the “Transportables”)⁵.

2. The Report and Order has proposed numerous, drastic changes to the rules governing the C-band, including taking away 60% of the available C-band spectrum currently used for distribution of video programming. The Commission has issued authorizations to PSSI for the Transportables that permit PSSI to receive global satellite signals in the 3.7-4.2 GHz frequency range in the C-band from any location (downlink – i.e., receiving a signal from a satellite), which are permanently paired on those authorizations with authority to transmit on the 5.925-6.425 GHz band (allowing the uplink – the return signal to the satellite) (the “Licenses”)⁶. As a result of the taking away of 300 MHz of spectrum,

³ Report and Order, p. 55 (¶ 131).

⁴ These vehicles are fully redundant satellite transportable uplink/downlink trucks and flyaway systems covering the entire United States.

⁵ In addition to the Transportables, PSSI owns Pittsburgh International Teleport (“PIT”), a 36-acre teleport facility established in 1983, together with a downtown Pittsburgh video production studio. The PIT teleport center transmits, receives, and distributes video, audio, and data content over satellite platforms, fiber optics, and internet protocol (IP) and has provided reliable high-quality satellite services and solutions to customers since its inception. In addition, PIT manages C-band satellite access control services for a major satellite carrier, including International Services, and works in conjunction with the PSSI transportable fleet in the management, distribution, and reception of major event services. PIT has approximately 50 C-band and Ku-band antennae on its property for the operation of the teleport. PIT is fully capable of providing Telemetry, Tracking, and Command (TT&C) services.

⁶ “[The] 3.7-4.2 GHz band (space-to-Earth or downlink) is paired with the 5.925-6.425 GHz band (Earth-to-

as well as failing to provide sufficient interference and power level protections to operators of Transportables like PSSI, the modification in the Report and Order is so total as to render the Licenses worthless and destroy the company's business.

3. PSSI has sought judicial review of the Report and Order in the U.S. Court of Appeals for the D.C. Circuit, as have the SSOs.⁷ PSSI agrees with the SSOs that these changes violate Section 316 of the Communications Act⁸ and that PSSI will prevail before the U.S. Court of Appeals on this claim.

4. PSSI has been irreparably harmed by the rules and policies adopted Report and Order. These harms include, but are not limited to, (1) the progressive elimination of occasional use transponder capacity reduces the ability to provide service at existing levels, if at all, (2) excessively high-power levels operating on in-band and adjacent out-of-band frequencies that already harm the ability to provide reliable service will only get worse, and (3) the related issue that there are no existing filtering solutions to protect Transportables from interference and damage from high powered emissions of new 5G licensees operating in the lower portion of what is today the C-band. All these harms flow directly from the Report and Order.

5. Among the Commission's several legal errors in the Report and Order, the SSOs the correctly note that the modifications of their authorizations made by the Report and Order vastly exceed its authority under Section 316 of the Communications Act. (Stay Petition, pp. 4-5, 10-16). Similarly, PSSI submits that the modification of the Licenses for the Transportables dictated by the Report and Order

space or uplink), and collectively these bands are known as the "conventional C-band." Report and Order, p. 5 (¶ 8).

⁷ See *PSSI Global Services, L.L.C. v. Federal Communications Commission, et al.*, Case No. 20-1142. The SSO appeal and petition for judicial review have been consolidated with the PSSI cases.

⁸ 47 U.S.C. § 316.

exceed the Commission’s authority and are so extensive and pervasive as to render the Licenses a nullity and eliminate the continued ability of transportable, transmit/receive earth station operators like PSSI to continue to provide service to the public, far exceeding the limits for permitted modification.⁹

6. In addition, the Commission modified PSSI’s Licenses without adequate notice, in that the Report and Order modified the uplink portion of PSSI’s Licenses after the Commission expressly gave notice that the Commission would be dealing with changes to the 5.925-6.425 GHz band separately from this proceeding¹⁰. By repurposing 300 MHz of spectrum in the C-band, the Commission has also effectively eliminated the inextricably linked 300 MHz of the uplink spectrum between 5.925-6.225 GHz paired with the frequencies between 3.7 and 4.0 GHz now to be repurposed for “flexible licensees.” Such failure to provide adequate notice of the modification of the uplink authorization is arbitrary, capricious and an abuse of discretion within the meaning of the Administrative Procedure Act (“APA”).¹¹

7. Indeed, the Commission even errs in its characterization of the Licenses. The Commission maintains on the one hand that holders of the Licenses are not “licensees” under the Communications Act (Report and Order at ¶¶ 43, 147), while simultaneously proceeding in the Report and Order to modify the Licenses (Report and Order, ¶ 409).¹²

8. Finally, the Commission has ignored the existence of immediately available alternatives, such as substantial blocs of frequency ideal for 5G in other mid-band frequency ranges, to the measures

⁹ *Community. Television, Inc. v. F.C.C.*, 216 F.3d 1133, 1140–41 (D.C. Cir. 2000). *See also MCI Telecommunications Corp. v. AT&T*, 512 U.S. 218, 225 (1994).

¹⁰ *Order and Notice of Proposed Rulemaking in GN Docket 18-122*, 33 FCC Rcd 6915, 6921 (¶ 12).

¹¹ 5 U.S.C. § 701 et seq.

¹² PSSI has raised additional issues with the U.S. Court of Appeals for the D.C. Circuit, but will limit its discussion to these issues on which it will likely succeed in the merits of its appeal.

adopted in the Report and Order that will strip 60% of the spectrum from C-band satellite operators, Transportable Licensees and earth station operators. These include substantial blocs of frequency ideal for 5G in other mid-band frequency ranges. Consequently, the public interest equities support grant of a stay of the Report and Order.

9. The Commission should stay the Report and Order pending completion of judicial review.

II. The Essential Role of the C-band and the Harm Caused to PSSI by the Report and Order

10. The C-band has been a critical component of PSSI's business since the company began operation. Since the inception of satellite services, the C-band has been and continues to be the preferred and most reliable method of transport-over-satellite for video, audio, and data for numerous reasons. It is the principal distribution mechanism for some of the nation's most popular programming, which is transmitted to over 120 million American television households, representing over 300 million people. The C-band is not only necessary for PSSI and its customers because of its preferred transmission reliability and signal quality in inclement weather (something particularly important to meet the commercial insurance requirements for high value pay-per-view and other major event transmissions), but also because of the preferred characteristics of C-band for more efficient high throughput transmissions. (Declaration of Robert C. Lamb, Exhibit 1, at pp. 1-2).

11. A key feature of those services is so-called "Occasional Use" ("OU"), which allows Transportables to provide reliable and insurable live events broadcast coverage, often on very short notice. A notable example of this was the record setting event that occurred just this past weekend on

May 24, 2020, which demonstrates the importance of C-band to live events programming.¹³ (Lamb Declaration, pp. 4, 6-8).

12. The OU event was Capital One's live "The Match II" event for Turner Sports from the Medalist Golf Club in Hobe Sound, Florida. This was a charity golf event broadcast live with Tiger Woods, Phil Mickelson, Peyton Manning and Tom Brady that raised \$20m for COVID-19 charity relief. It rained the entire day. (Lamb Declaration, p. 6).

13. As is the case at many venues, there was no fiber availability at the Medalist Golf Club, so that all primary and back-up transmission and reception of this event was provided via PSSI C-band transportable earth stations. PSSI provided two C-band satellite trucks at the origination point, and in cooperation with our teleport facilities at PIT, transmitted two separate paths of video and 16 channels of audio from each of the transportable earth stations, along with 100/100 Mbps of bidirectional data, and 50/50 Mbps of bidirectional internet. In total PSSI provided 420 Mbps of services, via four (4) C-band satellite transponders at the same time and utilized the PIT earth stations to provide back-up for the Turner teleport due to the poor weather conditions at both the origination in Hobe Sound, Florida and Turner Sports in Atlanta, Georgia. Prior to the event, PSSI provided C-band transmission and reception all week on the four (4) C-band transponders for testing and event services and were fortunate that the C-band spectrum was still available. Nevertheless, although some C-band spectrum remains available for the time being, had this been a typical Saturday in the Fall - when PSSI alone often has more than 15 C-band transportable earth stations working on at least one C-band transponder each (and each location has their own line-of-sight and RFI clearance concerns), this would have been a

¹³ CNN has reported that it was "the most-watched golf telecast in the history of cable television." <https://edition.cnn.com/2020/05/26/sport/the-match-viewership-record-turner-sports-spt-intl/index.html>

much different story regarding availability. Now, with the impending loss of available and viable C-band spectrum across the satellite arc from the Report and Order, protected events such as the successful charity “Match II” will no longer be possible. The necessary C-band transponder space will not be available for OU to do even basic event services, let alone the ever more expanding need for increased data and video throughput bandwidth demanded for these that services. No Ku-band or other spectrum would have survived this weekend’s rainy event without uplink rain fade and the complete loss of downlink reception would have been inevitable.¹⁴ Only the availability and crucial use of multiple OU C-band transponders allowed this very successful broadcast charity event to happen, and assured that the most watched golf telecast in the history of cable television was not a complete disaster. (Lamb Declaration, pp. 6-7).

14. The loss of 300 MHz of spectrum in the C-band will severely limit the available and accessible bandwidth that PSSI and other Transportable operators require to serve their customers. PSSI repeatedly stressed this before the Commission in its formal comments meetings and *ex parte* submissions. For example, in May 2019, when there was then still discussion of repurposing of “only” 200 MHz of the C-band, PSSI noted the concern that “the repurposing of any additional amount beyond 200 MHz would make it almost impossible to continue operating because of the competing

¹⁴ PSSI has previously noted the problems with the Ku-band as a substitute for C-band. “Ku-band is not a substitute for C-band. The possibility of rain at live events makes dependence upon Ku-band transmission unfeasible, given the Ku-band’s susceptibility to signal attenuation and rain fade (absorption of a microwave radio frequency (RF) signal by atmospheric rain, snow, or ice, and losses which are especially prevalent at frequencies above 11 GHz). It is also not physically possible to provide the high order modulation multi-path multiplexed solutions to our customers in the higher frequency Ku-band.” PSSI Initial Comments, p. 6, n.4. Like so many facts, the Commission has ignored this demonstrable shortcoming of Ku-band as an “alternative” to C-band in claiming that C-band satellite operators and Transportable companies can “maintain the same services as they are currently providing.” Report and Order, p. 55 (¶ 131).

demands for transponder capacity.”¹⁵ (Lamb Declaration, p. 8-9).

15. Transponder capacity has been lost at an increasingly rapid pace during the course of the C-band rule making and continues to decrease. In December 2018, PSSI noted that there were still 40 OU C-band transponders available.¹⁶ Yet, on May 6, 2020, Intelsat, the largest provider of C-band OU transponder capacity, advised that only 24 OU transponders currently remain available in the same 500 MHz of C-band spectrum inventory, while SES (the second largest carrier) maintains only 2 OU C-band transponders. Thus, without the carriers even announcing if they will accept accelerated relocation, the C-band OU inventory of the major carriers has already dropped by 35%. Given Intelsat's previous statement in December 2018 that it would lose approximately 20 transponders in relocation when reducing (only) 200 MHz of bandwidth (at the time), PSSI expects that number to be considerably higher, when clearing 300 MHz of bandwidth, as will now be required. A reduction of even the 20 OU C-band transponders will reduce the total OU capacity of the two largest carriers to less than six (6) transponders, at most. This is woefully inadequate when one considers that PSSI alone clears and utilizes two or three times that number of C-band transponders all week during the Fall covering NCAA College Football, NASCAR, WWE, UFC, GOLF, MLB games and playoffs, etc. C-band OU services will cease to exist if this Report and Order is allowed to stand. (Lamb Declaration, pp. 9-10). As noted in paragraph 13 above, PSSI needed four (4) transponders this past week to produce a single event, Capital One's live “The Match” event for Turner Sports.

16. Thus, it is evident that the transition and reduction of available C-band OU transponder

¹⁵ PSSI Letter dated May 9, 2019 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communications Commission, re meeting with William Davenport, Chief of Staff to Commissioner Geoffrey Starks.

¹⁶ PSSI Reply Comments, filed December 11, 2018, at p. 9 (¶ 19).

capacity is already occurring and accelerating. As customers are already being transitioned from one satellite transponder to another, double illumination (i.e., being on two sets of transponders during the transition) is required to duplicate the signal for earth station movements, testing and continuity. This process has begun and will only increase as more difficult C-band transition solutions (such as satellite arc position moves) must be implemented for full time transponder use. Satellite carriers are already having to work with each other to facilitate these bandwidth moves, and it is inconceivable to think that any significant amount of OU bandwidth will remain in the C-band for Transportable industry use for very long. (Lamb Declaration, p. 10).

17. This concern regarding the immediate impact of the availability of progressively less bandwidth for OU is not just the position of Transportable operators like PSSI. In an *ex parte* filing submitted on February 14, 2020, the National Association of Broadcasters (“NAB”), joined by the leading U.S. content companies, stressed the “important role in the content ecosystem that American television viewers enjoy today” played by transportable operators like PSSI¹⁷. The inevitable elimination of the available and protected full band, full arc, C-band OU spectrum that will result from the Order as currently drafted will directly disrupt and eliminate the ability of licensed incumbent C-band transportable service companies like PSSI to provide this irreplaceable transmission and reception services for their customer users from location, and will constitute a ‘fundamental change’ to their FCC authorizations. (Lamb Declaration, p. 11).

18. PSSI has already seen the impact of the Report and Order and its ramifications for future OU availability in the form of customer reluctance to commit to future projects. In the case of two

¹⁷ Letter dated February 14, 2020 from Patrick McFadden, Associate General Counsel, NAB, in Gen. Docket 18-122, to Marlene H. Dortch, Secretary of the Federal Communications Commission.

significant installation projects for major PSSI clients, those projects have been suspended after PSSI informed our customers regarding developments in the C-band proceeding and the Report and Order. (Lamb Declaration, p. 12).

19. Yet the harm is not only with respect to loss of capacity for OU. In addition to bandwidth scarcity issues caused by the Report and Order, there are serious technical problems for Transportable operators. PSSI has repeatedly advised the Commission of the harm to Transportables that will occur from the operations of 5G Flexible Licenses in the lower portion of the C-band. This harm is already occurring in immediately adjacent frequency bands, as PSSI consistently reported to the FCC.

20. The downlink signal in the 3.7-4.2 GHz band is received by PSSI's antennas at very low power levels from the satellite located 22,300 miles above the Earth. Consequently, the ability to receive those signals is greatly impacted by others operating in adjacent out-of-band and in-band frequencies, which will include the 5G Flexible Licenses to be authorized under the Report and Order. PSSI has repeatedly advised the Commission of the harm that will result from higher powered operations in the lower portion of the C-band or in adjacent bands, especially by new 5G transmitters of unknown and unregistered locations and power. (Lamb Declaration, p. 12).

21. For example, while covering Iowa State Football multiple times in the fall of 2019 for Fox Sports at Jack Trice Stadium in Ames, Iowa (most recently on November 23, 2019), PSSI's C-band return signal (in the 3.7-4.2 GHz band) was completely unusable on multiple frequencies for Fox. The problem resulted from a Verizon experimental license where Verizon towers were in very close proximity to the Stadium, and two were actually near to where PSSI's C-band Transportables were operating. Although Verizon's license provided for it to operate slightly below PSSI in the 3.65 – 3.70 GHz frequency range at an effective radiated power of up to only 20 watts, PSSI's return reception on

location in Ames was nevertheless completely blocked by the interfering signal and unusable.¹⁸ During the course of the rulemaking, PSSI offered additional examples of such interference in-band and near “out of band” emissions that shut down its ability to downlink signals from the satellites on location.¹⁹ (Lamb Declaration, p. 13).

22. Then there is the question of the higher power of Flexible 5G Licenses. Although the Report and Order has provided for filtering solutions that may protect *fixed location* satellite receive antennas, so long as there is sufficient geographic separation from 5G source interference and power, no such filtering solution yet exists for the antennas on Transportables that have integrated transmit-reject filters and no physical room for additional filtering on the antenna feed systems. It is not an exaggeration to state that when a Transportable operator like PSSI turns on the power at an OU event venue, he will burn out his Transportable antenna earth station receive system electronics as soon as the Transportable is powered on because of the inadequate power level protections in the Report and Order and the inevitable proximity to 5G power sources. (Lamb Declaration, p. 14).

23. After the then existing C-Band Alliance conducted a demonstration of filtering solutions for its customers at Intelsat’s Ellenwood, Georgia facility on April 3, 2019, PSSI reported to the Commission that although the filtering solution proposed could protect antennas at fixed locations, it could not do so for Transportables.²⁰ Given that power levels of a Flexible 5G License at any location in an urban

¹⁸ PSSI Letter dated January 9, 2020 in WT Docket No. 18-122 to Marlene Dortch, Secretary of the Federal Communications Commission, p. 4.

¹⁹ PSSI Letter dated November 15, 2019 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communications Commission, accompanying letter from Robert C. Lamb to Chairman Pai and fellow Commissioners, at p. 4.

²⁰ PSSI Letter dated May 6, 2019 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communication Commission, accompanying the report of prepared by A.J. Miceli, PSSI’s Vice President, Satcom Division, regarding the CBA antenna demonstration and problems for transportable operators.

area would exceed the extremely low power level of the satellite signal sent towards the Earth, this could cause catastrophic failure of the Transportable receiving antenna system as soon as it is powered on.²¹ PSSI's subsequent tests conducted with the CBA at PSSI's Orlando, Florida facilities confirmed that the filters would not protect Transportable antennas.²²

24. Worse still, not only are there as yet no available filters for Transportable antennas, Transportable operators also will be operating in the dark regarding potential interference. To minimize such interference by 5G Flexible Licenses, PSSI had proposed registration – not prior approval – of the location, frequencies and power levels of 5G Flexible License base stations to allow for inclusion in the frequency coordination process, particularly given the higher power operations of the future 5G mobile carriers²³. However, the Commission ignored this proposal and worse, will require earth station operators, including Transportables, to carry the burden of showing that 5G Flexible Licenses are being operated at variance from power levels or else accept the interference,²⁴ notwithstanding that such interference will wipe out the ability to receive the downlink from the satellites and the adoption by the Report and Order of power levels even higher than had been proposed by the satellite community. (Lamb Declaration, p. 16).

25. Thus, the harm from the Report and Order is evident, immediate and ongoing. The Commission's accelerated timetable for implementation of the Report and Order, which has already set

²¹ *Id.*, at p. 8.

²² PSSI Letter dated October 18, 2019 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communications Commission, accompanying letter from Robert C. Lamb reporting on antenna testing results.

²³ PSSI Letter dated January 8, 2020 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communications Commission, at 4; PSSI Letter dated February 5, 2020 in WT Docket No. 18-122 in Response to Draft Order, at 5.

²⁴ Report and Order at 136 (¶ 371).

a deadline of May 29, 2020 for the election of incentives by the satellite carriers and set an auction to commence on December 8, 2020, will only exacerbate the harm to PSSI and others dependent upon the C-band.²⁵

III. Legal Standard for Motion for Stay

26. Whether to grant a stay is governed generally by the standard enunciated by the U.S. Court of Appeals for the D.C. Circuit in *Virginia Petroleum Jobbers Ass'n v. Federal Power Commission*.²⁶ The Commission has incorporated this four-part test in reviewing requests for stay.²⁷ This standard requires the party seeking the stay to show (a) the likelihood that the movant will prevail on the merits; (b) the potential that the movant would be irreparably harmed absent a stay; (c) the potential that the issuance of a stay would substantially harm others; and (d) the effect the issuance of a stay would have on the public interest.²⁸ PSSI submits that the Stay Petition meets the *Virginia Petroleum Jobbers* standard.

A. Likelihood of Success on the Merits

27. PSSI will address first the Stay Petition's arguments regarding the Commission's incorrect analysis of modification of licenses under Section 316 of the Communications Act and failure to give notice of the changes in the licenses, as required by the APA.

²⁵ In fact, Intelsat and SES Americom filed such accelerated relocation elections on May 26, 2020.

²⁶ 259 F.2d 921 (D.C. Cir. 1958). See also *Wisconsin Gas Co. v. F.E.R.C.*, 244 U.S. App. D.C. 349, 758 F.2d 669, 673-74 (D.C. Cir. 1985); *Washington Metropolitan Transit Comm. v. Holiday Tours, Inc.*, 559 F.2d 841 (D.C. Cir. 1977).

²⁷ *In the Matter of Detariffing the Installation and Maintenance of Inside Wiring (Memorandum Opinion and Order)*, 2 FCC Rcd 349 (1987)

²⁸ *Id.*, at 350, citing *Comart Cable Fund III*, 104 FCC 2d 451 (1985).

1. Section 316 – Permissive Modification or Fundamental Altering of License?

28. The Stay Petition has captured the crux of the failure of the Commission’s arguments regarding Section 316 when it notes that “what the Commission has done here is no mere ‘modification.’” (Stay Petition, at p. 2). However much the Commission suggests that it is so, it runs against the clear, factual record demonstrating the contrary and the legal limits on its ability to modify the Licenses. As noted above, when evaluating how satellites and Transportables use OU for live coverage of major broadcasting events, that will no longer be possible as a result of the policy changes made by the Commission in the Report and Order. Removing 60% of the usable spectrum guarantees this outcome. This demonstrates only one way in which the SSO authorizations and PSSI Licenses have been fundamentally altered.²⁹

29. In the Report and Order, the Commission states that its authority under Section 316 is limited to those situations “where the affected licensee is able to continue providing substantially the same service following the modification.”³⁰ Yet that is not what the Commission has done in the Report and Order. As a result of the taking away of 300 MHz of spectrum from the SSOs and the Transportables like PSSI, the modification in the Report and Order is so total as to render the Licenses worthless and destroy the company’s business.³¹

²⁹ The Licenses are also affected by the Commission’s failure to provide sufficient interference and power level protections to operators of Transportables like PSSI, as well as without proper notice under the APA eliminating the ability to transmit conventional C-band, 5.925 GHz to 6.225 GHz. See p. __, *infra*.

³⁰ Report and Order, at 57 (¶ 135), citing *Community Television, Inc. v. F.C.C.*, 216 F.3d 1133, 1140–41 (D.C. Cir. 2000). Significantly, in *Community Television*, the Court applied that reasoning to Section 316 of the Communications Act and suggested that impairing the ability of a licensee to provide the same services as those enabled by the original license might be considered a fundamental change.

³¹ The failure of the Commission’s modification argument is exacerbated by the Commission’s failure to provide sufficient interference and power level protections to operators of Transportables like PSSI.

30. As the *Community Television* court noted, in suggesting the limits to the Commission’s power to modify a license, the affected broadcasters in that case “will begin and end the transition period broadcasting television programming to the public under very similar terms.”³² As later clarified by the U.S. Court of Appeals, “the Commission’s section 316 power to ‘modify’ existing licenses does not enable it to fundamentally change those licenses.”³³ However, as repeatedly explained by PSSI in this case – and by the SSOs in the Stay Petition – that is not what the Report and Order actually does. There is nothing “similar” to PSSI’s situation following the adoption of the Report and Order.

31. The Supreme Court has expressed it in this manner: the power of the Commission to “modify” an authorization “has a connotation of increment or limitation”³⁴ and “does not contemplate fundamental changes.”³⁵ Notwithstanding that the Commission found – and the Court affirmed – in the *Community Television* case a permissive modification, the changes wrought by the Report and Order are fundamental. Despite it being clear that the holding of an FCC license does not vest a property right, it has been recognized for more than 70 years that a license is a thing of value to the person to whom it is issued; a business conducted under it may be the subject of injury and that license confers a private right, although a limited and defeasible one.³⁶ By eliminating the majority of the available spectrum for operation of the Transportables, as well as the technical limitations that the Report and Order place on the Licenses, the Commission has caused that injury. What is dismissed as a “modification” is in fact a death sentence for Transportables and OU programming. The Commission

³² *Community Television*, *supra*, 216 F.3d at 1141.

³³ *Cellco Partnership v. F.C.C.*, 700 F.3d 534, 543 (D.C. Cir. 2012).

³⁴ *MCI Telecommunications Corp. v. AT&T Co.*, 512 U.S. 218, 224 (1994).

³⁵ *Id.*, at 226.

³⁶ *L. B. Wilson, Inc. v. Federal Communications Com.*, 170 F.2d 793, 798 (DC Cir. 1948).

has exceeded its statutory authority in eliminating the business of the satellite operators like the SSOs and Transportable operators like PSSI in the guise of “modification of license.”

32. Moreover, as the Stay Petition notes, the very justification that licensees can provide the same level of service – which itself has been proven to be false – is at odds with the text of the Communications Act. As the Stay Petition correctly notes, Section 316 addresses modifications to “station license[s]” and the rights conferred thereby—it says nothing about current levels of service to existing customers. (Stay Petition, p. 13). “[A] ‘fundamental change[]’ to the terms of [an] existing license[]” depends on how the decision affects the *rights held* by the licensee -- not the current level at which those rights are being exercised.” (*Id.*, citing *Celco*, *supra*). An FCC license is modified for purposes of Section 316 of the Communications Act when an unconditional right conferred by license is substantially affected.³⁷ The Report and Order substantially restricts those rights for Transportable operators like PSSI. This restriction comes in the form of elimination of the right to use of 60% of the authorized uplink and downlink C-band spectrum, not the substitution of one channel for a comparable or better one.³⁸

33. “An agency [o]rder that is at odds with the requirements of the applicable statute cannot survive judicial review.”³⁹ By claiming that a licensee can perform as it has prior to adoption of rules that fundamentally alter the terms and ability to provide service, the FCC makes a mockery of its power to “modify”. A reviewing court will owe the Commission no deference in such an interpretation given the facts. PSSI and the SSOs will prevail on their arguments regarding the limits on the Commission’s

³⁷ *P & R Temmer v. F.C.C.*, 743 F.2d 918 (D.C. Cir. 1984).

³⁸ See generally, *Transcontinent Television Corp. v. F.C.C.*, 308 F.2d 339 (D.C. Cir. 1962).

³⁹ *United Parcel Service, Inc. v. Postal Regulatory Commission*, 955 F.3d 1038, 1050 (D.C. Cir. 2020), citing *Michigan v. EPA*, 135 S. Ct. 2699, 2706 (2015).

power to modify their respective authorizations.

2. Failure to Provide Proper Notice

34. PSSI also concurs with the SSOs that the Commission has failed to give proper notice to satellite operators of the change in Commission policy, comparing the examples of 28 GHz and 39 GHz incumbent licensees. (Stay Petition, p. 16-18). Such failure to give proper notice constitutes arbitrary and capricious action by the agency. This is particularly so given that what the Commission has done effectively amounts to a sanction, as argued by the SSOs. (Stay Petition, p. 18). Section 312 of the Communications Act requires giving of proper notice. *Id.*

35. The Report and Order has also failed to give proper notice to PSSI of fundamental changes in its Licenses. The Commission has now modified PSSI's Licenses without adequate notice, in that the Report and Order modified the uplink portion of PSSI's Licenses after the Commission expressly gave notice that the Commission would be dealing with changes to the 5.925-6.425 GHz band separately from this proceeding⁴⁰. By repurposing 300 MHz of spectrum in the C-band, the Commission has also effectively eliminated the inextricably linked 300 MHz of the uplink spectrum between 5.925-6.225 GHz paired with the frequencies between 3.7 and 4.0 GHz now to be repurposed for "flexible licensees."

36. As the Court of Appeals has only recently noted in vacating an order of the Commission in the Lifeline proceeding, "For notice to be sufficient, the final rule must be "a logical outgrowth" of the proposed rule in the sense that the original notice must "adequately frame the subjects for discussion."⁴¹

⁴⁰ *Order and Notice of Proposed Rulemaking in GN Docket 18-122*, 33 FCC Rcd 6915, 6921 (¶ 12).

⁴¹ *National Lifeline Association v. F.C.C.*, 921 F.3d 1102, 1115 (D.C. Cir. 2019), citing *Omnipoint Corp. v. F.C.C.*, 78 F.3d 620, 631 (D.C. Cir. 1996).

Here, not only was the issue inadequately framed for the C-band proceeding, the Commission expressly disclaimed that it would modify the “uplink” portion of the Licenses in the C-band proceeding.

37. The Commission cannot impose a sanction – here the modification of the “uplink” portion of PSSI’s Licenses – where inadequate notice is given.⁴² To constitute proper notice, PSSI should have been able to have “have anticipated’ the agency’s final course in light of the initial notice.”⁴³ Where the Commission has specifically said that it would not do so, it logically follows that it would not modify the uplink portion of the Licenses. Thus, the Commission has acted arbitrarily and capriciously when it failed to give adequate notice of the change in PSSI’s Licenses.

3. The Legal Challenges Will Prevail on the Merits

38. The SSOs have presented compelling arguments as to why they have a substantial likelihood of prevailing in arguing on judicial review that the Commission’s action is arbitrary and capricious and does not constitute reasoned decision-making. PSSI is similarly raising challenges to the Report and Order that have a substantial likelihood of prevailing on the merits of their claims.

39. The SSOs and PSSI have demonstrated that the Commission has exceeded its authority under Section 316 of the Communications Act to modify a license by causing such a fundamental change, in the case of PSSI, to render them worthless. Further, the Commission has failed to give adequate notice of the scope of the proposed modifications of license. The SSOs and PSSI will prevail on their legal challenges. Accordingly, a stay is warranted. The Commission should grant the Stay Petition.⁴⁴

⁴² *SNR Wireless License Co. v. F.C.C.*, 868 F.3d 1021, 1043 (D.C. Cir. 2017) (a basic principle of administrative law that an agency cannot sanction an individual for violating the agency's rules unless the individual had "fair notice" of those rules).

⁴³ *National Lifeline*, *supra*, citing *Covad Communications Co. v. F.C.C.*, 450 F.3d 528, 548 (D.C. Cir. 2006)

⁴⁴ There is no requirement to find that ultimate success by the movant is a mathematical probability. *Washington Metropolitan Transit*, *supra*, 559 F.2d at 843.

B. The Report and Order Has Caused Irreparable Harm

40. To demonstrate irreparable harm, a party must show that the harm is certain and great and of such imminence that there is a clear and present need for equitable relief.⁴⁵ A party seeking a stay, regardless of the high likelihood of success on the merits, must “demonstrate that irreparable injury is *likely* in the absence of” a stay.⁴⁶ The SSOs have demonstrated that they will suffer such harm immediately unless a stay is granted. PSSI will similarly suffer such harm, as is outlined in the attached Declaration of Robert C. Lamb, PSSI’s CEO, and indeed is already experiencing it.⁴⁷

41. Using the example of OU, PSSI has recounted above how the Report and Order is already impacting its business. As noted, programming partners have already put projects on hold. The amount of transponders available for OU is rapidly disappearing, a process that will only accelerate with transponder capacity being taken up by dual illumination during the transition period envisioned under the Report and Order, which itself will be accelerated by the impending May 29th election date, by which time the satellite carriers will avail themselves of Accelerated Relocation Elections and the prospect of substantial incentive payments.⁴⁸

42. Moreover, looming is the Commission’s auction of the 3.7-4.0 GHz portion of the frequency band, currently scheduled for December 8, 2020.⁴⁹ As the Stay Petition correctly notes, a stay is

⁴⁵ *Wisconsin Gas Co. v. F.E.R.C.*, 758 F.2d 669, 673-74 (D.C. Cir. 1985).

⁴⁶ *Winter v. NRDC, Inc.*, 555 U.S. 7, 22 (2008) (emphasis supplied).

⁴⁷ This is an injury an injury “traceable to an act of the defendant and redressable by a favorable decision.” *N.J. TV Corp. v. FCC*, 393 F.3d 219, 221 (D.C. Cir. 2004), citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992). Contrast *New World Radio v. F.C.C.*, 294 F.2d 164, 170 (D.C. Cir. 2001) (speculative injury).

⁴⁸ Public Notice, “Wireless Telecommunications Bureau Announces the Process for Accelerated Relocation Elections by Eligible Space Station Operators in the 3.7–4.2 GHz Band,” 85 Fed. Reg. 30956 (May 21, 2020).

⁴⁹ The Commission has already issued a Public Notice seeking comment on the auction procedures for the C-band auction. Public Notice, “Auction of Flexible Use Service Licenses in the 3.7-3.98 GHz Band,” 35 FCC Rcd 2601 (Wir. Tel. Bur. 2020). Indeed, the Commission has already completed the public comment period

necessary to “to avoid setting in motion the machinery of an unlawful auction that cannot be unwound.” (Stay Petition, p. 3).

43. Not only is the spectrum available for Transportables to provide OU services, but the technical rules are flawed, as previously noted. As the Stay Petition notes, the “Commission is authorized to issue flexible-use licenses—the type of licenses it intends to auction in this proceeding—only where the flexible use “would not result in harmful interference among users.” (Stay Petition, p. 11).⁵⁰

44. However, as noted by PSSI, that is simply not true in this case. PSSI has demonstrated that higher powered operations in the lower portion of the C-band or in adjacent bands will wipe out its ability to provide service at OU venues for its customers, as occurred from Verizon facilities at Ames, Iowa in the fall of 2019. (Lamb Declaration, p. 13). PSSI has presented evidence that no filters yet exist to protect Transportable antennas from harmful interference; that the power levels from 5G License at any location in an urban area would exceed the extremely low power level of the satellite signal sent towards the Earth and will cause catastrophic failure of the Transportable receiving antenna system as soon as it is powered on. Yet the Commission has ignored these facts, as well as reasonable alternatives such as requiring registration of the locations of new Flexible 5G Licenses to allow coordination, and which in turn would permit compliance with Section 303(y) of the Communications Act.

45. The injuries caused by the Report and Order are concrete and already occurring. To allow this Report and Order to take effect prior to completion of judicial review will only exacerbate the harm and immediately threatens the continued viability of the Transportable industry.

for the auction.

⁵⁰ See also 47 U.S.C. § 303(y).

C. Neither Third Parties nor the Public Interest Will Be Harmed by a Stay

46. In addition to the likely success on the merits and irreparable harm, neither the public interest nor third parties would be harmed by grant of the stay. Even if that were not the case, the harm that other parties may endure because of imposing a stay is outweighed by the irreparable injury that holders of authorizations in the C-band like PSSI and the SSOs would sustain absent a stay and tilts the balance in favor of granting the stay.⁵¹

47. There is more than sufficient spectrum currently available and more immediately deployable in the mid-band range, so that a short delay in any C-band auction, pending completion of judicial review, is reasonable. As the SSOs have noted, the Commission has already made additional mid-band spectrum available. (Stay Petition, p. 32).⁵²

48. PSSI has also noted this on various occasions in this proceeding. For example, the incentive auction made 70 megahertz of spectrum available as of 2017 and the previous major spectrum auction, the AWS-3 auction, made 65 megahertz available. There are blocks of AWS-4, 700 MHz E Block, and H Block spectrum currently going unused. T-Mobile has inherited substantial unbuilt 2.5 GHz spectrum from Sprint as a result of their recently consummated merger.

49. There is no harm to third parties or the public interest which could preclude grant of the stay.

IV. Conclusion

50. The Report and Order, by eliminating 60% of the available spectrum, devastates the C-band and the services that it provides. The SSOs have persuasively argued why the Commission should stay

⁵¹ *Iowa Utils. Bd. v. F.C.C.*, 109 F.3d 418, 426 (8th Cir. 1996). See also *Winter*, *supra*.

⁵² *Transforming the 2.5 GHz Band*, Report and Order, 34 FCC Rcd 5446 (2019); *Promoting Investment in the 3550-3700 MHz Band*, Report and Order, 33 FCC Rcd 10,598 (2018).

the Report and Order pending judicial review.


51. The SSOs, as supplemented by PSSI, have demonstrated substantial errors in the Commission's characterization of a "modification" of their licenses that are, in fact, fundamental changes beyond those permitted under Section 316 of the Communications Act. They have also demonstrated that the Commission has modified their licenses without proper notice. Further, they have demonstrated that they will prevail on these claims on judicial review.

52. The SSOs and PSSI have also demonstrated the substantial harm to themselves, as well as to the entire video distribution system. The harm that they have demonstrated is already occurring and irreparable.

53. Further, neither the public interest nor third parties would be harmed by grant of the stay. There is more than sufficient mid-band spectrum available for 5G services at the present time, so that there would be no harm to the public interest by grant of a stay.

54. Thus, the Stay Petition meets the *Virginia Petroleum Jobbers* test. The Commission should grant the Stay Petition.

WHEREFORE, in light of the foregoing, PSSI respectfully requests that the Commission grant the requested stay of the Report and Order.

By: 
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Date: May 27, 2020

Declaration of Robert C. Lamb

I, Robert C. Lamb, do hereby declare as follows:

A. Background

1. I am the Chief Executive Officer and Manager of PSSI Global, L.L.C. (“PSSI” or the “Company”) and have served in this capacity since PSSI was founded. PSSI was formed to provide consultation and coordination of television production and satellite transmission services for the corporate, entertainment and broadcast industries. PSSI is today the leading full-service satellite transmission and mobile transportable solutions company operating in the United States.

2. I understand that this Declaration is being submitted as part of PSSI’s Comments in Support of SSO Petition for Stay of the decision by the Commission in FCC General Docket No. 18-122, *In the Matter Expanding Flexible Use in the 3.7 – 4.2 GHz Band (Report and Order and Order of Proposed Modification)*, 35 FCC Rcd ___, FCC 20-22, released March 3, 2020) (the “Report and Order”).

3. The 3.7-4.2 GHz frequency band (the “C-band”) has been a critical component of PSSI’s business since our inception. The C-band has been and continues to be the preferred and most reliable method of transport-over-satellite for video, audio, and data for numerous reasons. It is the principal distribution mechanism for some of the nation’s most popular programming, which is transmitted to over 120 million American television households, representing over 300 million people. The C-band is not only

necessary for PSSI and its customers because of its preferred transmission reliability and signal quality in inclement weather (something particularly important to meet the commercial insurance requirements for high value pay-per-view and other major event transmissions), but also because of the preferred characteristics of C-band for more efficient high throughput transmissions.

4. PSSI operates a fleet of more than 60 vehicles, which have FCC licenses to operate from any location without having a fixed latitude and longitude (“Transportables”), unlike stand-alone, fixed receive antennas. PSSI’s Transportables provide essential production, transmission and dissemination services for thousands of high-quality, live video programs and live special events every year. Until now, earth station operators in the C-band have been authorized on a “full-band/full-arc” basis, which permits use of all 500 megahertz of the C-band to send and receive programming¹. These signals in the 3.7-4.2 GHz band – albeit faint because they are downlinked from satellites located 22,300 miles above the earth -- are received by satellite earth stations on the ground, including PSSI’s Pittsburgh International Teleport and its large fleet of Transportables. The 3.7-4.2 GHz frequencies for downlink reception are permanently paired with PSSI’s licensed authority to transmit on the 5.925-

¹ The “full-band, full-arc” policy means that satellites have the right to transmit over the entire 500 MHz of the band and earth stations can point their dishes at any satellite along the geostationary arc. Thus, at any point, there are many signals from many satellites transmitting over the entire band all over the country.

6.425 GHz band for the uplink signal to the satellite. Together these bands are known as the “Conventional C-band,” and by the Commission’s own admission, there is an inherent and fixed bond between the two that is inseparable². The two bands are directly tied together and the proposed repurposing of the lower 300 MHz of the Conventional C-band downlink spectrum (3.7-4.2 GHz) is in fact repurposing the lower 300 MHz of the Conventional C-band uplink spectrum (5.925-6.425 GHz) as well. Changes made to one frequency band directly impact the other.

5. The Report and Order has proposed numerous, drastic changes to the rules governing the C-band, including taking away 60% of the available C-band spectrum currently used for distribution of video programming. Further, the Report and Order has ignored evidence of the impact of effective radiated power and interference from the fifth-generation mobile services (the so-called “Flexible 5G Licenses”) to be authorized in the 3.7-4.0 GHz portion of the C-band.

6. As outlined below, the Report and Order is already causing irreparable harm to PSSI and other operators of Transportable services. The Commission’s contention that PSSI and other Transportable operators will be able “to maintain the same services as they are currently providing”³ is false. It is not possible to provide current services with 300 MHz (60%) less bandwidth available, as well as the technical limitations of the

² Report and Order at 5 (¶ 8).

³ Report and Order, p. 55 (¶ 131).

Report and Order.

7. There are three defects in the Report and Order that are having an immediate impact on Transportable operators like PSSI: (1) the progressive elimination of occasional use transponder capacity reduces the ability to provide service at existing levels, if at all, (2) excessively high-power levels operating on in-band and adjacent out-of-band frequencies already that harm the ability to provide reliable service will only get worse and (3) the related issue that there are no existing filtering solutions to protect Transportables from interference and damage from high powered emissions of Flexible 5G Licenses.

B. Elimination of Occasional Use Transponder Capacity Means Losing Ability to Provide Services at Existing Levels

8. Since the inception of satellite services, C-band has proven to be the preferred and most reliable method of transport-over-satellite for video, audio, and data for a multitude of broadcasters, corporations, and even the U.S. government because of the special spectrum characteristics of the C-band. A key feature of those services is so-called “Occasional Use” (“OU”), which allows Transportables to provide reliable and insurable live events broadcast coverage, as previously noted, often on very short notice.

9. OU is an industry “term of art” to describe part-time use of transponders for individual programs, to contrast with programmers who contract for full-time use of C-band satellite transponders for distribution (for example, HBO, ESPN and CBS, which

have dedicated transponders to permit transmission of programming on a 24-hour basis). A transponder is defined as the receiver and transmitter in a communications or broadcast satellite, relaying received signals back to earth.⁴ As a practical matter, transponders on C-band satellites operate on a “bent pipe” principle, sending back to Earth exactly what goes into the conduit (from Earth), with only amplification and a frequency shift from “uplink” frequency to the already paired “downlink” frequency (which is in the 3.7-4.2 GHz band).

10. OU services involve substantial use of the C-band and are essential to PSSI and its customers who rely upon “occasional use” on a daily basis. These broadcast event origination and distribution programs include sports, entertainment, pay-per-view, corporate, news, and government type service coverage of television events and services domestically and worldwide.⁵ As recently as June 2019, ESPN, the leading sports programming provider, noted that in 2018, it acquired nearly 29,000 sports feeds (e.g., of late-breaking developments, press conferences) over the C-band, which was an

⁴ Collins English Dictionary – Complete and Unabridged, 12th Edition 2014.

⁵ Examples of such domestic and international OU events are the annual Academy Awards, as well as nearly every other live award event, such as the Grammy Awards, and the Prime-Time Emmy Awards; the NFL Super Bowl (and other important NFL games), Major League Baseball World Series (and all MLB playoffs, and All Star events, etc.), The Masters (and all PGA golf events), Daytona 500 (and all NASCAR series events), NBA Playoffs (which in recent years included finals from Canada), international competitive soccer (including the World Cup), and the NCAA Men and Women’s major playoffs, football bowl games, and basketball championships.

increase of more 1,300 feeds provided to it over the C-band in 2017-18.⁶

11. Although OU involves regular use of the bandwidth, it is often not possible to know in advance when or where the Transportables must be dispatched to provide coverage because of the nature of the programming⁷. Moreover, not all geosynchronous orbit satellites and transponders can be used by Transportables for any given OU event at a particular location. Transportable earth stations need to have satellite “line-of-sight” access and transponder frequency clearance to connect with a particular available satellite and transponder.

12. A notable, recent example of the importance of OU was broadcast this past weekend on May 24, 2020, Capital One’s live “The Match II” event for Turner Sports from the Medalist Golf Club in Hobe Sound, Florida.⁸ Match II was a charity golf event broadcast live with Tiger Woods, Phil Mickelson, Peyton Manning and Tom Brady that

⁶ Letter dated June 7, 2019 in WT Docket 18-122, from Matthew S. DelNero, Covington & Burling, counsel for CBS Corp., Discovery, Inc., The Walt Disney Company (“Disney”), Fox Corp., Univision Communications Inc., and Viacom Inc., to Marlene Dortch, Secretary of the Federal Communications Commission, at p. 2. Disney is ESPN’s parent.

⁷ An example, as noted in PSSI’s Initial Comments, filed October 29, 2018, was the 2018 Major League Baseball World Series. Until the Los Angeles Dodgers and Boston Red Sox won their respective league championships (the Dodgers did not win the National League title until Saturday, October 20, 2018), there was no way that Fox Sports could be certain from where they would need to be present for Fox’s World Series C-band transmission coverage that began on October 23, 2018.

⁸ CNN has reported that it was “the most-watched golf telecast in the history of cable television.” <https://edition.cnn.com/2020/05/26/sport/the-match-viewership-record-turner-sports-spt-intl/index.html>

raised \$20m for COVID-19 charity relief. It rained the entire day.

13. As is the case at many venues, there was no fiber availability at the Medalist Golf Club, so that all primary and back-up transmission and reception of this event was provided via PSSI C-band transportable earth stations. PSSI provided two C-band satellite trucks at the origination point, and in cooperation with our teleport facilities at PIT, transmitted two separate paths of video and 16 channels of audio from each of the transportable earth stations, along with 100/100 Mbps of bidirectional data, and 50/50 Mbps of bidirectional internet. In total PSSI provided 420 Mbps of services, via four (4) C-band satellite transponders at the same time and utilized the PIT earth stations to provide back-up for the Turner teleport due to the poor weather conditions at both the origination in Hobe Sound, Florida and Turner Sports in Atlanta, Georgia. Prior to the event, PSSI provided C-band transmission and reception all week on the four (4) C-band transponders for testing and event services and were fortunate that the C-band spectrum was still available. Nevertheless, although some C-band spectrum remains available for the time being, had this been a typical Saturday in the Fall - when PSSI alone often has more than 15 C-band transportable earth stations working on at least one C-band transponder each (and each location has their own line-of-sight and RFI clearance concerns), this would have been a much different story regarding availability. Now, with the impending loss of available and viable C-band spectrum across the satellite arc from the Report and Order, protected events such as the successful charity

“Match II” will no longer be possible. The necessary C-band transponder space will not be available for OU to do even basic event services, let alone the ever more expanding need for increased data and video throughput bandwidth demanded for these that services. No Ku-band or other spectrum would have survived this weekend’s rainy event without uplink rain fade and the complete loss of downlink reception would have been inevitable.⁹ Only the availability and crucial use of multiple OU C-band transponders allowed this very successful broadcast charity event to happen, and assured that the most watched golf telecast in the history of cable television was not a complete disaster.

14. The loss of 300 MHz of spectrum in the C-band will severely limit the ability of PSSI and other Transportable operators to have available and accessible bandwidth to serve their customers. PSSI repeatedly stressed this before the Commission in its formal comments meetings and *ex parte* submissions. For example, in May 2019, when there

⁹ PSSI has previously noted the problems with the Ku-band as a substitute for C-band. “Ku-band is not a substitute for C-band. The possibility of rain at live events makes dependence upon Ku-band transmission unfeasible, given the Ku-band’s susceptibility to signal attenuation and rain fade (absorption of a microwave radio frequency (RF) signal by atmospheric rain, snow, or ice, and losses which are especially prevalent at frequencies above 11 GHz). It is also not physically possible to provide the high order modulation multi-path multiplexed solutions to our customers in the higher frequency Ku-band.” PSSI Initial Comments, p. 6, n.4. Like so many facts, the Commission has ignored this demonstrable shortcoming of Ku-band as an “alternative” to C-band in claiming that C-band satellite operators and Transportable companies can “maintain the same services as they are currently providing.” Report and Order, p. 55 (¶ 131).

was then still discussion of repurposing of “only” 200 MHz of the C-band, PSSI noted the concern that “the repurposing of any additional amount beyond 200 MHz would make it almost impossible to continue operating because of the competing demands for transponder capacity.”¹⁰

15. Transponder capacity has been lost at an increasingly rapid pace during the course of the C-band rule making and continues to decrease. In December 2018, PSSI noted that there were still 40 OU C-band transponders available.¹¹ Yet in May 2020, Intelsat, the largest provider of C-band OU transponder capacity, advised that only 24 OU transponders currently remain available in the same 500 MHz of C-band spectrum inventory, while SES (the second largest carrier) maintains only 2 OU C-band transponders. Thus, without the carriers even announcing if they will accept accelerated relocation, the C-band OU inventory of the major carriers has already dropped by 35%. Given Intelsat's previous statement in December 2018 that it would lose approximately 20 transponders in relocation when reducing (only) 200 MHz of bandwidth (at the time), PSSI expects that number to be considerably higher, when clearing 300 MHz of bandwidth, as will now be required. A reduction minimally of the 20 OU C-band transponders will reduce the total OU capacity of the two largest carriers to less than six

¹⁰ PSSI Letter dated May 9, 2019 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communications Commission, re meeting with William Davenport, Chief of Staff to Commissioner Geoffrey Starks.

¹¹ PSSI Reply Comments, filed December 11, 2018, at p. 9 (¶ 19).

(6) transponders, at most. This is woefully inadequate when one considers that PSSI alone clears and utilizes two or three times that number of C-band transponders all week during the Fall covering NCAA College Football, NASCAR, WWE, UFC, GOLF, MLB games and playoffs, etc. C-band OU services will cease to exist if this Report and Order is allowed to stand.

16. Thus, it is evident that the transition and reduction of available C-band OU transponder capacity is already occurring and accelerating. As customers are already being transitioned from one satellite transponder to another, double illumination (i.e., being on two sets of transponders during the transition) is required to duplicate the signal for earth station movements, testing and continuity. This process has begun and will only increase as more difficult C-band transition solutions (such as satellite arc position moves) must be implemented for full time transponder use. Satellite carriers are already having to work with each other to facilitate these bandwidth moves, and it is inconceivable to think that any significant amount of OU bandwidth will remain in the C-band for our industry use for very long.

17. With the adoption of the Report and Order, in addition to the problem of reduced bandwidth overall, there is a question of the cost resulting from the economics of scarcity. As the main satellite operators (Intelsat, SES America, Telesat, Eutelsat) relocate customers leasing transponders on a full-time basis in the repurposed lower 300 MHz to transponders in the remaining 200 MHz of the C-band, the opportunity cost of

providing OU will increase. Also, as the National Association of Broadcasters (“NAB”) has noted, there is the more fundamental question of whether the main satellite operators will continue to provide such services and “if they did choose to do so, prices would increase dramatically to reflect continued operating and capital expenses that would need to be recovered” through much less spectrum.¹² At a meeting held on April 9, 2019, I was specifically told by representatives of Intelsat that they had no plans to stop selling full-time use of the reduced C-band transponder capacity if they should have a buyer/user because profits from full-time transponder space is traditionally at least double that from OU, without the cost of OU transponder access management. Such sales will inevitably reduce even further the amount of available capacity for overall OU programming.

18. This concern regarding the immediate impact of the availability of progressively less bandwidth for OU is not just the position of Transportable operators like PSSI. In an *ex parte* filing submitted on February 14, 2020, the NAB, joined by the leading U.S. content companies, stressed the “important role in the content ecosystem that American television viewers enjoy today” played by transportable operators like PSSI¹³. The inevitable elimination of the available and protected full band, full arc, C-band OU

¹² Comments of the National Association of Broadcasters in WT Docket 18-122, filed August 7, 2019, at 3.

¹³ Letter dated February 14, 2020 from Patrick McFadden, Associate General Counsel, NAB, in Gen. Docket 18-122, to Marlene H. Dortch, Secretary of the Federal Communications Commission.

spectrum that will result from the Order as currently drafted will directly disrupt and eliminate the ability of licensed incumbent C-band transportable service companies like PSSI to provide their irreplaceable transmission and reception services for their customer users from location, and will constitute a ‘fundamental change’ to their FCC licenses.

19. PSSI has already seen the impact of the Report and Order and its ramifications for future OU availability in the form of customer reluctance to commit to future projects. In the case of two significant installation projects for major PSSI clients, those projects have been suspended after PSSI informed our customers regarding developments in the C-band proceeding and the Report and Order.

C. 5G Operations Are Already Harming the Ability of PSSI’s Transportables to Provide Reliable Service for Clients

20. In addition to bandwidth scarcity issues caused by the Report and Order, there are serious technical problems for Transportable operators. PSSI has repeatedly advised the Commission of the harm to Transportables that will occur from the operations of 5G Flexible Licenses in the lower portion of the C-band. This harm is already occurring, as PSSI consistently reported to the FCC in immediately adjacent frequency bands.

21. As explained above, PSSI and other Transportable operators receive a downlink signal in the 3.7-4.2 GHz band at very low power levels from the satellite located 22,300

miles above the Earth. Consequently, the ability to receive those signals is greatly impacted by others operating in adjacent out-of-band and in-band frequencies, which will include the 5G Flexible Licenses to be authorized under the Report and Order. PSSI has repeatedly advised the Commission of the harm that will result from higher powered operations in the lower portion of the C-band or in adjacent bands, especially by new 5G transmitters of unknown and unregistered locations and power.

22. For example, while covering Iowa State Football multiple times last fall for Fox Sports at Jack Trice Stadium in Ames, Iowa (most recently on November 23, 2019), PSSI's C-band return (in the 3.7-4.2 GHz band) was completely unusable on multiple frequencies for Fox. The problem resulted from a Verizon experimental license where Verizon towers were in very close proximity to the Stadium, and two were actually near to where PSSI's C-band Transportables were operating. Although Verizon's license provided for it to operate slightly below PSSI in the 3.65 – 3.70 GHz frequency range at an effective radiated power of up to only 20 watts, PSSI's return reception on location in Ames was nevertheless completely blocked by the interfering signal and unusable.¹⁴ During the course of the rulemaking, PSSI offered additional examples of such interference in-band and near "out of band" emissions that shut down its ability to downlink signals from the satellites on location.¹⁵

¹⁴ PSSI Letter dated January 9, 2020 in WT Docket No. 18-122 to Marlene Dortch, Secretary of the Federal Communications Commission, p. 4.

¹⁵ PSSI Letter dated November 15, 2019 in WT Docket No. 18-122 to Marlene H.

D. Damage to Transportable Antennas

23. Further, there is the extreme concern regarding the inability to protect the antenna receive systems of Transportables from being significantly damaged by higher powered operation by 5G Flexible Licenses. Although the Report and Order has provided for filtering solutions that may protect *fixed location* satellite receive antennas, so long as there is sufficient geographic separation from 5G source interference and power, no such filtering solution yet exists for the antennas on Transportables that have integrated transmit-reject filters and no physical room for additional filtering on the antenna feed systems. It is not an exaggeration to state that when a Transportable operator like PSSI turns on the power at an OU event venue, he will burn out his Transportable antenna earth station receive system electronics as soon as the Transportable is powered on because of the inadequate power level protections in the Report and Order and the inevitable proximity to 5G power sources.

24. After the then existing C-Band Alliance¹⁶ conducted a demonstration of filtering solutions for its customers at Intelsat's Ellenwood, Georgia facility on April 3, 2019, PSSI reported to the Commission that although the filtering solution proposed could

Dortch, Secretary of the Federal Communications Commission, accompanying letter from Robert C. Lamb to Chairman Pai and fellow Commissioners, at p. 4.

¹⁶ The consortium among Intelsat, SES Americom, Telesat (Canada) and Eutelsat, which has since been dissolved.

protect antennas at fixed locations, it could not do so for Transportables.¹⁷ Given that power levels of a Flexible 5G License at any location in an urban area would exceed the extremely low power level of the satellite signal sent towards the Earth, this could cause catastrophic failure of the Transportable receiving antenna system as soon as it is powered on.¹⁸ PSSI's subsequent tests conducted with the CBA at PSSI's Orlando, Florida facilities confirmed that the filters would not protect Transportable antennas.¹⁹

25. Worse still, not only are there as yet no available filters for Transportable antennas, Transportable operators also will be operating in the dark regarding potential interference. To minimize such interference by 5G Flexible Licenses, PSSI had proposed registration – not prior approval – of the location, frequencies and power levels of 5G Flexible License base stations to allow for inclusion in the frequency coordination process, particularly given the higher power operations of the future 5G mobile carriers²⁰. However, the Commission ignored this proposal and worse, will

¹⁷ PSSI Letter dated May 6, 2019 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communication Commission, accompanying the report of prepared by A.J. Miceli, PSSI's Vice President, Satcom Division, regarding the CBA antenna demonstration and problems for transportable operators.

¹⁸ *Id.*, at p. 8.

¹⁹ PSSI Letter dated October 18, 2019 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communications Commission, accompanying letter from Robert C. Lamb reporting on antenna testing results.

²⁰ PSSI Letter dated January 8, 2020 in WT Docket No. 18-122 to Marlene H. Dortch, Secretary of the Federal Communications Commission, at 4; PSSI Letter dated February 5, 2020 in WT Docket No. 18-122 in Response to Draft Order, at 5.

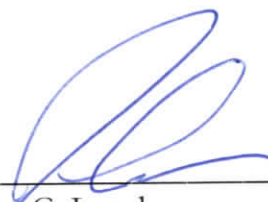
require earth station operators, including Transportables, to carry the burden of showing that 5G Flexible Licenses are being operated at variance from power levels or else accept the interference,²¹ notwithstanding that such interference will wipe out the ability to receive the downlink from the satellites and the adoption by the Report and Order of power levels even higher than had been proposed by the satellite community.

E. Conclusion

26. What I have noted above represents only three examples of the imminent harm to PSSI and its ongoing ability to continue to conduct its business as a result of the Report and Order. Despite the Commission's rhetoric to the contrary, Transportable operators will not be able to service their customers under the changes proposed in the Report and Order, as demonstrated so clearly by the example of troubles experienced in the fall of 2019 at Ames, Iowa., and troubles fortunately averted this past weekend at the charity Match II in Hobe Sound, Florida.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Dated: May 27, 2020



Robert C. Lamb

²¹ Report and Order at 136 (¶ 371).